Amendments to the Specification

At specification page 1, before the paragraph beginning with "[t]he invention relates to," insert the following headings:

BACKGROUND OF THE INVENTION

1. Field of Invention

At specification page 1, before the paragraph beginning with "[c]orresponding cassettes," insert the following heading:

2. Description of the Prior Art

At specification page 2, before the paragraph beginning with "[i]t is therefore the object," insert the following heading:

SUMMARY OF THE INVENTION

At specification page 2, replace the paragraph beginning with "[t]his object is solved" with the following replacement paragraph:

This object is solved in accordance with the invention by means of an apparatus ~~having the feature combination of claim 1~~ that has the features of the fluid treatment machine and cassette as described herein. Actuators and sensors are arranged here in a generic apparatus for the treatment of a medical fluid for the operation of the apparatus with an inserted cassette such that cassettes are insertable in different integration shapes.

At specification page 3, replace the paragraph beginning with "[p]articularly advantageous aspects" with the following replacement paragraph:

Particularly advantageous aspects of the invention result from the ~~depending claims 2 to 16 subordinate to the main claim~~ various embodiments of the apparatus described herein.

At specification page 3, replace the paragraph beginning with "[c]assettes in accordance with" with the following replacement paragraph:

Cassettes in accordance with the invention for insertion into the aforesaid inventive apparatus ~~result in a particular aspect from the subsequent claims 17 to 25~~ are achieved with the various embodiments thereof that are described herein.

At specification page 3, before the paragraph beginning with "[d]etails and advantages of the invention," insert the following heading:

BRIEF DESCRIPTION OF THE DRAWINGS

At specification page 5, before the paragraph beginning with "[i]n Fig. 1," insert the following heading and new paragraph:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Further scope of applicability of the present invention will become apparent from the detailed description given hereinafter. However, it should be understood that the detailed description and specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.

At specification page 5, replace the paragraph beginning with "[i]n Fig. 1" with the following replacement paragraph:

In Fig. 1, a cassette 10 in accordance with an embodiment variant of the present invention is shown which can be used in this embodiment for standard hemodialysis. In Fig. 1, the surface of the cassette 10 is divided into a hatched region B (two partial areas) and a ~~non-hedged~~ non-hatched region A. Both the surface of the cassette 10 and the surface of the associated machine block (cf. Fig. 7) are divided into the covering surface regions A and B, with components of actuators or sensors to be coupled, which are common to all cassettes as basic variants, for example all the cassettes shown here for standard hemodialysis being accommodated in the surface region A (not hatched in Fig. 1) and with the surfaces B denoting regions in which actuators or sensors to be used optionally are provided in the machine block (cf. Fig. 7) and are

only used as required, for example in cassettes in accordance with Fig. 2.

At specification page 5, replace the paragraph beginning with "[t]he cassette consists of" with the following replacement paragraph:

The cassette consists of a base body 12 of a cassette which consists of polypropylene in the embodiment shown here. A cover foil not shown in more detail here and consisting, for example, of a polyolefin elastomer mixture, is applied to the base body of the cassette. The passages and recesses, which will be looked at in more detail later, are covered by this cover foil 14. An arterial injection septum 16 is provided in the arterial line 18 to the dialyzer and a venous injection septum 20 is provided in the venous line 22 to the dialyzer. The dialyzer itself and the corresponding tube connection are not shown in any more detail in the embodiment shown here. Reference number 24 designates the blood inlet from the patient and 26 the blood outlet to the patient. The respective tubes, which likewise consist of a polyolefin elastomer mixture, are also not shown here for reasons of simplification. Passages 28 are recessed in the base body 12 of the cassette. They are acted on by a row of valves 30.

At specification page 6, replace the paragraph beginning with "[a]n arterial port 42" with the following replacement paragraph:

An arterial port 42 and a heparin port 44 is provided at the cassette which are each connected via corresponding passages to the passage carrying the arterial blood in each case via phantom valves 46. The phantom valves 46 are used in the cassette 10 in accordance with the invention instead of conventional open T-branches. In these phantom valves, the passage wall is not interrupted from the aspect of the main blood flow. The detailed design of these phantom valves results from the German patent application DE 100 53 441 of the same applicant to which reference is made here. Reference number 48 designates a venous port which likewise opens into a blood-carrying passage 28, here in the venous part of the blood-carrying passages, via a phantom valve 46.

At specification page 7, replace the paragraph beginning with "50 designates" with the following replacement paragraph:

Reference number 50 designates two pump chambers which serve the pumping of the blood. The design of the pump chambers 50 results in detail from Fig. 12. The pump chambers 50 activated via membrane pumps provided at the machine side have substantially tangential inlets and outlets for a uniform throughflow of the total chamber, as already results from Fig. 1. The shape of the

pump chambers 50 is pre-determined by the correspondingly shaped base body 12 of the cassette and can be approximately described as a spherical section. At the periphery, the base body of the cassette has a raised edge 52 around the pumping chambers 50 which serves as a stop bead. In addition, as results from Fig. 12, the peripheral edge of the spherical section is set somewhat lower so that in the pressing-out phase, that is in the phase in which the cover foil 14 is moved toward the base body 12 of the cassette, a flushing edge or flushing passage 54 is formed. The flushing edge or flushing passage 54 is advantageously made in that the spherical pump surface at the machine side which is not shown in Figure 12 has a smaller radius than the radius of the pump chamber at the cassette side. The radius difference Δr is drawn in Figure 12. A wide flushing edge or flushing passage 54 is hereby formed. This flushing edge or flushing passage 54 is an annular space for the pumped blood in the extreme pressing-out position. This free annular space, on the one hand, avoids blood damage by being trapped between the foil surface and the injection molded surface at the end of the pressing-out phase and, on the other hand, blood damage due to high flow speeds and shearing strains which would result at the start of the start-up phase if no free annular space were provided.

At specification page 8, replace the paragraph beginning with "[b]ubbles are trapped" with the following replacement paragraph:

Bubbles are trapped in the venting chamber 56 by a slowing down of the blood flow. As shown in Fig. 10, a rotation flow is generated for effective air separation with minimum area requirements on the cassette 10. In this process, the generation of the final rotation flow is only ~~create~~ created in the operating state of the cassette 10 in the fluid treatment machine 100 (cf. Fig. 10). The cover foil 14 of the cassette 10 is pulled into the fluid treatment machine by a corresponding vacuum coupling system of which only one vacuum suction passage 102 is shown in Fig. 10. An almost circular cross-section of the venting chamber 56 is thereby formed. The rotation flow of the blood is supported in that the passage opening into the venting chamber 56 also runs - together with its cover foil 14 - slightly into the machine side so that an almost tangential inflow within the chamber is achieved. An effective suction can take place at the machine side at the venting stub 60. A low filling volume results overall here in the venting chamber 56 as a result of the construction.

At specification page 11, replace the paragraph beginning with "[i]n Fig. 6" with the following replacement paragraph:

In Fig. 6, in turn, a modified embodiment variant of the cassette 10 in accordance with Fig. 3 is shown. Here, a dialyzer 72 is in turn integrated instead of the handle, with here a connection 99 being provided between the dialyzer 72 and the passage 28 which carries the filtrate and which leads to the filtrate pump chamber 94.

At specification page 11, replace the paragraph beginning with "[t]he fluid treatment machine 100" with the following replacement paragraph:

The fluid treatment machine 100 substantially consists of a frame 104 which surrounds and/or includes or receives the most important components. A door 106 is fitted to the frame 104, on the one hand, and the machine block 108 is guided in the frame, on the other hand. All forces occurring between the door 106 and the interior of the unit are absorbed by means of the frame 104, namely the door hinge, door latch, pressing actuator system and the rear wall. The frame furthermore contains the ~~latching of the~~ door latch 110. The cassette 10 is received between the door 106 and the machine block 108, as shown in the Figures 8 and 9, and is sealed by pressing. Sensor system elements are included in the cassette region of the machine and they detect whether a cassette is correctly positioned in the fluid treatment machine. These, or further sensor system elements, can be designed such that they are

suitable for recognizing the cassette type (e.g. with the aid of a barcode on the cassette).

At specification page 19, after the last line, insert the following new paragraph:

The invention being thus described, it will be apparent that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be recognized by one skilled in the art are intended to be included within the scope of the following claims.

At specification page 20 (i.e., the first claims page), replace the heading with the following replacement heading:

~~Claims~~ WHAT IS CLAIMED IS: